The Health Belief Model: A Qualitative Study to Understand High-risk Sexual Behavior in Chinese Men Who Have Sex With Men

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The Health Belief Model (HBM) has been widely used to explain rationales for health risk-taking behaviors. Our qualitative study explored the applicability of the HBM to understand high-risk sexual behavior in Chinese men who have sex with men (MSM) and to elaborate each component of the model. HIV knowledge and perception of HIV prevalence contributed to perceived susceptibility. An attitude of treatment optimism *versus* hard life in reality *affected perceived severity. Perceived barriers included discomfort using condoms and condom availability. Perceived benefits included prevention of HIV and other sexually transmitted illnesses. Sociocultural cues for Chinese MSM were elaborated according to each component. The results demonstrated that the HBM could be applied to Chinese MSM. When used with this group, it provided information to help develop a population- and disease-specific HBM scale. Results of our study also suggested behavioral interventions that could be used with Chinese MSM to increase condom use.*

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Male-to-male sexual behavior has become a primary transmission route for the HIV epidemic in China. Men who have sex with men (MSM) have been the most rapidly increasing population of people living with HIV in recent years. The percentages of newly reported HIV cases in China that were attributable to MSM were 0.2% in 2001, 12.2% in 2007, and 32.5% in 2009 (China Ministry of Health, Joint United Nations Programme on HIV/AIDS, & World Health Organization, 2010; Liu et al., 2006; State Council AIDS Working Committee Office & United Nations Theme Group on AIDS in China, 2007). A high proportion of risky sexual practices and multiple sexual partners were the main reasons for the rapid increase of HIV prevalence in this population. Studies have shown that 49% to 72% of MSM engaged in unprotected anal intercourse in the previous 6 months, and the average number of sexual partners was around five (Choi, Gibson, Han, & Guo, 2004; Ruan et al., 2008; Zhang, Bi, Iv,

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Zhang, & Hiller, 2007). Thus, understanding the determinant factors of high-risk sexual behavior for MSM and designing relevant interventions to improve safe-sex practices are important goals for HIV prevention in China.

The Health Belief Model (HBM) is a cognitive model that has been used to understand the rationale for people's health risk-taking behaviors ever since it was developed in the 1950s. It has addressed issues such as smoking, substance abuse, obesity, sexually transmitted infection (STI), and HIV (Rosenstock, Strecher, & Becker, 1994). The model assumes that individual willingness to engage in preventive health behavior depends on five components: (a) perceived susceptibility (vulnerability) to a certain disease, (b) perceived severity of the disease, (c) perceived benefits of taking preventive actions, (d) perceived barriers to taking such action, and (e) cues to action (e.g., illness of a friend, information about the disease communicated by the media, internal stimuli; Rosenstock et al., 1994). In an attempt to improve its predictive ability, researchers expanded the HBM to include the concept of self–efficacy (Rosenstock, Strecher, & Becker, 1988).

Studies in a range of countries have examined the capacity of the components of the HBM to predict sexual risk-taking behaviors; however, findings from these studies have been inconsistent and provided only partial evidence to support the model. Some studies showed that almost all of the model components could be the determinants of condom use to prevent HIV infection (Adih & Alexander, 1999; Rosenstock et al., 1994; Steers, Elliott, Nemiro, Ditman, & Oskamp, 1996). In contrast, other studies found that only perceived barriers was a significant predictor of condom use (Volk & Koopman, 2001; Winfield & Whaley, 2002). Another study found that only self-efficacy predicted students' intentions to use condoms and get tested for STI and HIV (Zak-Place & Stern, 2004). Thus, some researchers have argued that prevention strategies based only on increasing perceived risk and perceived severity might not be sufficient to improve condom use (Hounton, Carabin, & Henderson, 2005).

In contrast, other scholars have suggested that the HBM is powerful enough to predict health-related behaviors and have pointed out reasons for apparent inconsistencies. For example, HBM component variables were measured in different ways in previous studies (Bakker, Buunk, Siero, & van den Eijnden, 1997). In addition, the components of the HBM might be socioculturally and population sensitive, especially the *cues to action* component. One study targeting Asian immigrants in the United States found the HBM scale to be psychologically problematic and suggested that acculturation needed to be taken into account (Lin, Simoni, & Zemon, 2005). Therefore, scales based on the HBM should be operationalized to cultural and disease specifics in order to achieve better predictive validity.

The HBM is widely used throughout China. However, little is known about the effectiveness of this model to contribute to improved understanding of high-risk sexual behaviors by MSM. Whether the HBM can be applied to Chinese MSM to improve our understanding of high-risk sexual behavior is not known. An HBM scale has not yet been designed to target MSM in China. Therefore, our study aimed to qualitatively describe and explore the applicability of the HBM to understand high-risk sexual behavior in Chinese MSM. Our study also sought to provide information to develop a population- and disease-specific HBM scale, and to suggest potential behavioral interventions for Chinese MSM.

Methods

Study Design

We used a descriptive and exploratory qualitative study design to describe male-to-male sexual behavior and condom use status in Chinese MSM, and to explore the rationale for high-risk sexual behavior according to the HBM in the Chinese culture context.

Study Site

From November to December 2013, 17 in-depth semi-structured interviews were completed with MSM in *Zuo An Cai Hong*, an MSM nongovernmental organization (NGO) located in the center of Changsha, Hunan province, which has been affiliated with the Changsha Center for Disease Prevention and Control since 2008. *Zuo An Cai Hong* offered